Description

Method of Quantitative Analysis of Corporate Communication Performance

BACKGROUND OF INVENTION

[0001] The invention pertains to the field of operations research in corporate communication effectiveness. Reputation is a key driver of corporate and brand value. But fragmenting media and an increasingly connected economies are making reputation management increasingly difficult. Traditionally, public relations professionals, be they corporate staff or PR service providers, have been working with press clippings to analyse the coverage in selected publications of a particular company and its competitors. Naturally, there are only so many clippings a person can analyse, and the advent of articles that are electronically available through (internet) search engines and press data bases have alleviated problems of access, choice of articles, and a tailored articles sets as a result of electronic searches. However, these tools as such do not provide any

further help in a holistic analysis process as described below, and the problem of judging the performance of the communications operations objectively persists. A company with a far larger market share (or indeed PR and advertising budget) will naturally have a wider press coverage than a smaller competitor, yet this in itself does not indicate how effectively the available resources are being utilised. Furthermore, the results of a quantitative analysis lend themselves to being displayed in a variety of graphs, allowing status and trends to be more easily monitored and communicated than by today's ubiquitous summary reports.

SUMMARY OF INVENTION

[0002] The invention provides a method to optimise the operation of communication planning and campaign execution. Reputation is a key value driver, central to the competitive advantage of every business, and it is not built through corporate communications alone. Therefore, the invention provides for the fact that reputation is an enterprise-wide concern, and managing it requires a real-time, enterprise-wide view and an audience that goes beyond the traditional PR employee to product responsible units and business area managers. It is important that business takes a

strategic approach to reputation management, built on greater intelligence and clearer measurement, which is described in some detail below. The method can be partitioned into three layers, each layer provides input into the next, and each layer belongs to a higher level in the overall process of a communications operation than the preceding layer:

[0003] First, a diagnosis of a company's reputation in the media using quantitative tools to analyse media performance in the public press across a given competitor set. The quantitative insights are based on computational results such as counting articles, words or article mentions of a name or issue in the world press, by region, publication or format. Different weightings according to publication, type, article length or any other attributes are possible. This data is aggregated and analysed to produce trends that are then displayed as graphs. Furthermore, it takes into account data outside the realm of communications and the press, such as a company's revenue (in total or per region, product line, etc), market share, financial performance such as profitability and share price, and events such as quarterly/yearly reports to shareholders. This external data helps to normalise the quantitative results and

facilitates comparisons between competitors of unequal size.

[0004] Secondly, using this knowledge and benchmarked best practice supports the tool-based process of identifying which metrics support the business and marketing objectives for each market, product or corporate message. Taking into account proprietary data such as the communication budget of a client the performance of the communications effort can be benchmarked objectively. By monitoring the changes in performance one builds the prerequisite for continuous process improvement into the organisation.

[0005] Thirdly, employees of the client company in product management and other strategic positions are given access to a web-based gallery of analysis results needed to build learning into their communications processes. The system offers the resulting key performance indicators in a "cockpit" style manner. Up-to-date results in a concise presentation and convenient access are a necessary foundation for continuous operations improvement towards increasing the effectiveness of corporate communications.

[0006] This method provides benefits in the following areas: – Press management (more effective internal processes to

deliver more targeted visibility at a lower cost), –Issue and crises management (identification of a reputation threat before it spirals out of control), –Message Optimisation (understanding the message strategy of competitors allows for better timing and placement of the client company's messages), and –Campaign benchmarking (return-of-investment measures for PR campaigns).

[0007] It should be noted that the described method is not only relevant for companies, but can just as well be applied to non-profit and non-governmental organisations, issues of general interest, matters of public policy, etc.

BRIEF DESCRIPTION OF DRAWINGS

[0008] Figure 1: Example database schema for article searches

[0009] Figure 2: Company related financial data tables

[0010] Figure 3: Overview of tools packages with sample applications

[0011] Figure 4: Overview of project work-flow

[0012] Figure 5: Sample entry form for search sets

[0013] Figure 6: Table containing search status (last run, NULL for queued run)

[0014] Figure 7: User interface for favourability rating of articles

[0029]   The following description starts with the data sets that
build the foundation of the methodology and system im-
plementation: (i) articles, (ii) financials, and (iii) bench-
marking inputs. The discussion continues with the tools
built around these data sets such as (iv) data acquisition
and housekeeping, (v) discovery, and (vi) visualisation of
results. Finally, it is described how these tools are de-
signed and packaged into tightly integrated processes (vii)
analysis, (viii) benchmarking, and (ix) monitoring. The ex-
amples provided merely represent one possible embodi-
ment of the invented method, and different embodiments
of the discussed concepts are easily conceivable.

[0030]   *Article data sets:* Any article has certain attributes
(meta-data) associated with it. These attributes are typi-
cally, but not limited to, date of publication, the publica-
tion itself, article language, author, number of words in
the article. These attributes are usually available from the
media source delivering the article. Similar to the article
record itself, the publication in which it appears has cer-
tain attributes of interest: publication type (broadsheet,
trade press, newswire), geographic reach, prestige/au-
thority/circulation, etc. These publication attributes rep-

resent a separate set from the article attributes.

[0031] In addition to the above mentioned properties, the "reason" why a particular article is of interest is usually because it discusses a certain topic, product, company, person, etc. These will define the terms, called subjects here, used to narrow a search bringing up the individual articles. In most cases one is interested in quantitative comparisons between, say, products or companies, so within an analysis task these terms will be permutated (e.g. each company with each product class) to form a specific set of searches. Thus, typical quantitative analysis might be done for a client against N competitors, c_n with $n=0,...,N$ where c_0 denotes the client. To be investigated are a number of M subjects (or subject combinations), s_m with $m=0,...,M$ with $s_0=\varnothing$ (all mentions of c_n) and their relation with K article or publication attributes (or attribute combinations), $a_{m,k}$ with $k=0,...,K_m$ and $a_{m,0}=\varnothing$ (all mentions of $c_n \cap s_m$) discussed in $\{p_p\}$ publications (or categories of publications). The selected attributes could be any of the article or publication attributes such as time of publication, geographies, type of publication, etc. The set of attributes may well be different for each subject s_m but subjects and attributes per subject ought to be the

same for all competitors c_n.

[0032] The search delivers a set of records $\{r_i(c_n, s_m, a_{m,k})\}$ of news items matching these subjects and attributes. Thus, a record in the article data set would consist of the following entries: r_i = {project name, search set, search terms, date, publication, language, number of words, title, body}. A sample embodiment of a possible data table setup is provided in Figure 1.

[0033] *Financial data sets:* For studies comparing a client (product) with competitors, basic financial and business data is needed to correlate the media search results to such properties as company size and events. Such data sets typically consist of size of the company/division (by revenues, employees), market share, share price. Figure 2 shows an embodiment of financial data table layout. This financial data is also used to normalise certain search results, e.g. number of articles per revenue dollar or percent market share. This normalisation enables one to see who is "punching above/below their weight". Data sets containing events such as reporting dates of quarterly or yearly financial results for publicly listed companies are also useful to explain a flurry of articles at certain times.

[0034] *Benchmarking data sets:* By nature of PR work, the output is

publicly visible in terms of media coverage etc. In order to measure efficiencies one needs information about the process "input", which is typically proprietary information such as PR budget, size/number of employees in communications department etc. Newswires typically charge companies for the publication service of their press releases, and with a larger budget and staff a company is able to get more press releases published this way. Newspapers then decide which of these press statements contain information useful to their readers, and it is these articles in the general or specialist press which are potentially beneficial or destructive to a company's reputation. How much "traction" (press releases published by newswires being picked by newspapers to feature in an article) a company achieves is therefore a valuable insight into the efficiency with which it uses its PR budget, and measuring the efficiency lays the foundation for improving the communications operation.

[0035] *Tools:* While it is possible to do an entire quantitative media analysis manually, this would be very cumbersome and error prone. In conjunction with the invention, tools have been designed that make the background processing as painless as possible. An overview of a few key tools,

grouped in packages, is given in Figure 3. The tools can be grouped into sections of the overall workflow (see also Figure 4): customer interaction is aided by online specification sheets and interactive demonstration tools of the quantitative analysis methodology, media analysis uses data acquisition and text mining tools, benchmarking incorporates the use of further proprietary data, and finally reporting and visualisation tools transmit the results back to the customer.

[0036] *Data acquisition and housekeeping:* Depending on the type of analysis to be run, there are a number of searchable media sources available. These can vary from freely accessible Usenet discussion fora or internet search engines, to commercial offerings of world-wide aggregators of publications (electronic versions of printed press or online articles). The choice of media source determines which sort of article attributes are available. Depending on the analysis requirements, availability of the attributes has an impact on the number of search runs. The total number of individual search runs X is typically equal to $X=M(N+1)$, where $N+1$ is the number of companies/products (client + N competitors) and M the number of subjects. In the worst case, some article attributes of interest are not available at

all, reducing the degree of automation of the analysis process. In the best case, all relevant attributes are provided with the articles. Frequently, the attributes are not delivered as part of the article itself but are a selectable feature of a search run, the total then comes to

$$X = (N + 1) \sum_{m=0}^{M} (K_m + 1)$$

where K is the number of selected attribute sets. A sample entry page for search attributes (date range, publisher, language, etc) is given in Figure 5. After setting up the search set the individual search permutations are generated and executed sequentially on the desired aggregator. The search parameters are stored automatically and can easily be rerun for updates or edited, an example of a table holding the stati of searches is given in Figure 6.

[0037] *Favourability:* As there is currently no established method whereby a piece of software algorithm can determine the favourability of an article toward a product/issue/client, a favourability analysis needs human intervention. The current tool is based on the assumption that a large enough randomly selected subset will provide a very similar

favourability picture as the full set. Hence the reviewer will only need to rate the subset of articles (the tools cross-checks that the random sample represents a proportional selection of publication types, languages, dates or whatever attributes may be active for that particular search set). The tool cycles through the sample subset of articles and presents the reviewer (see Figure 7) with a choice of classifying the article as "positive", "neutral", and "negative".

[0038] *Word Frequency:* Keeping track of the words used in a set of articles (excluding the most frequently used words in a language, sample user interface in Figure 8), one can plot the changes in occurrence/frequency of use over time as a coloured map (example see Figure 19), where the colour represents a sharp/modest increase/decrease of the tracked word. The area allotted to a particular word is proportional to its use. Based on thousands of articles as input, one immediately gets an impression on what the discussion is about (most frequently used words have largest area), and tracked over time how the tone of discussion may be shifting (colour changes, e.g. dark red=sharp increase, red=increase, grey=no change, green=decrease, dark green=sharp decrease). Known text

mining tools such as tree maps, as shown in Figure 21, to expose associated issues, and document cluster plots, as shown in Figure 20, can be gainfully employed to further aid the "discovery" part of the analysis process.

[0039] *Visualisation of Results:* From the base of data records, the number of obtained hits $h_{n,m,k}(\Delta t_l)$ can be summed up over daily, weekly, or monthly blocks of time Δt_l with $l=1,\ldots,L$, on any level of detail $h_{n,m,k}(\Delta t_l)$ or $h_{n,m}(\Delta t_l)$ or $h_n(\Delta t_l)$. Examples of various types of graphs are shown in Figure 9 to Figure 15. Figure 9 shows a simple bar chart of a volume of articles

$$V_{n,m} = \sum_{l=1}^{L} h_{n,m,0}(\Delta t_l)$$

related to a set of companies ($n=0,\ldots,5$) and their data storage offering ($m=1$). Figure 10 further distinguishes the articles by one of their attributes ($k=0,\ldots,3$), in this case language

$$V_{n,m,t} = \sum_{i=1}^{I} h_{n,m,t}(\Delta t_i)$$

. Figure 11 compares certain qualities such as reliability and performance of companies' offering ($m=1,...,7$). Figure 12 shows the share of articles of won IT service contracts with certain industries. Figure 13 shows an ordered listing of those publication sources where the most articles of a search set were published. Figure 14 shows the volume of articles about one certain subject over time, $h_{n,1}(\Delta t_i)$, and Figure 15 shows the clustering of articles in one category (here all about contracts and orders, $h_{n,1,0}(\Delta t_i)$) versus another (totality of articles, $h_{n,0,0}(\Delta t_i)$). However, the invention is not limited to those types of graphs, examples of other useful types of graphs not shown here are the scatter matrix, bubble charts, radar plots, and Venn diagrams.

[0040] *Business processes for communications improvement:*The service delivered to the customer can broadly be described in 3 stages (see also Figure 16 and workflow in Figure 4):

[0041] ·(1) An initial snapshot of the current media coverage a

customer is getting, with any desired resolution in terms of geography, issues, type of publications, all which can be compared to results competing companies achieve. *Media analysis project brief and setup of data gathering:* (overview see Figure 17): Aiding the communication between client (or client-facing PR team) and analysis supplier is the following web-based checklist to be filled out jointly by both parties. The values in the checklist can be automatically transferred to provide draft search sets, the starting point of the analysis process step. Usually the project brief will need to be augmented so that the resulting data on which any further analysis is based is a fair representation of the original intention. Note that it might be necessary to augment the search parameters with some exclusions, such as "NOT share price" or "NOT stock market" or in case of a web search the companies' home pages, to filter out what might otherwise be dominant noise on the data. Thus the setup of the search terms for the data gathering is an iterative procedure, as is the layout of a mockup web page with a gallery of graphs, which provides easy navigation and custom positioning to facilitate direct comparisons between search results (by competitors, regions, product class, date, etc). Interpreting the data is obviously a cre-

ative process, aided by visualisation and text mining tools, examples of which are described above.

[0042] ·(2) This snapshot may lead to a number of open questions, where the follow-up of these is the second stage. Together with the customer, research is conducted to explain the current media profile, in particular taking into account "input" measures (effort, budget, ...) a customer puts into PR. Using financial data available and linked to companies in article database to set media coverage in context with company/competitor size etc. Proprietary benchmarking data may be available to provide graphs on efficiencies, which can be compared to best-of-class results.

[0043] ·(3) The third stage is implementing monitoring tools that enable continuous process improvement in PR efficiency. Regularly monitoring PR input and media output is a prerequisite for cycles of learning of how to optimise a company's communication with its stakeholders. The aforementioned analysis cannot only be carried out as one-shot. Once the search and visualisation tools have been set up, these can be rerun on a regular basis (hours, days), yielding up-to-date information and thereby enabling real-time tracking. This facilitates continuous pro-

cess improvement as the effect of modified input parameters on the media output can be measured. One embodiment of such a monitoring setup is an interactive web site, which lets the client select the issues of interest, with the system going through a pre-configured process to provide up-to-date graphs. Some customers may appreciate additional consulting services related to the implementation of the methodology described herein into their own workflow, interpretation of results, in particular in comparison to their competitors, yielding concrete action items of how to optimise their corporate communications.